

The Amorium Project: Research and Excavation in 2000

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INTRODUCTION

No fieldwork was carried out in 1999. Instead, efforts focused on research and publication, while plans and preparations were made to resume work at the site in the following year.¹ During the course of the 2000 season, which lasted for five weeks from 7 August through 7 September, considerable progress was made in several important ways.² Owing to

the hiatus in 1999, it was necessary to carry out essential repair and cleaning work at all of the excavation areas across the site and at the Dig House. Site enhancement and conservation work included the removal of more of the spoil heaps at the northern end of the Upper City mound, the consolidation of the Upper City fortification wall (first capped in 1993–94) and the Enclosure wall (capped in 1996), and the replacement of the timber-framed roof (erected in 1996) over the fresco in the south aisle of the Lower City Church. The fresco itself was examined by Emre Eser, the field conservator, and a condition report was prepared, while Dr. Jo-

¹ For a brief report on 1999, see C. S. Lightfoot, "The Amorium Excavation Project," in G. Coulthard, ed., *Anatolian Archaeology: Research Reports of the British Institute of Archaeology at Ankara [BIAA]* 5 (1999 [2000]): 10. For the 2000 season, see C. S. Lightfoot, "Amorium 2000," in G. Coulthard, ed., *Anatolian Archaeology: Research Reports of the BIAA* 6 (2000 [2001]): 10–11. Other recent publications include C. S. Lightfoot and Y. Mergen, "Amorium 1998 Yılı Kazı Çalışmaları," *XXI. Kazı Sonuçları Toplantısı. Ankara, 24–28 Mayıs 1999—Ankara*, vol. 2 (Ankara, 2000), 143–52; C. S. Lightfoot, "Amorium: The History and Archaeology of an Ancient City in the Turkish Period," in A. Aktaş-Yasa, ed., *Uluslararası Dördüncü Türk Kültürü Kongresi (4–7 Kasım 1997, Ankara)*, vol. 2, Atatürk Kültür Merkezi Yayını 229 (Ankara, 2000), 79–89; and C. S. Lightfoot, "Le site d'Amorium," *Dossiers d'archéologie* 256 (Sept. 2000), 32–33. Reference to Amorium can also be found in E. A. Ivison, "Urban Renewal and Imperial Revival in Byzantium (730–1025)," *ByzF* 26 (2000): 1–46, esp. 13–18, 27; P. I. Kuniholm, "Dendrochronologically Dated Ottoman Monuments," in U. Baram and L. Carroll, eds., *A Historical Archaeology of the Ottoman Empire: Breaking New Ground* (New York, 2000), 93–136 (see p. 114, no. 23); C. S. Lightfoot, "Bizans Döneminde Afyonkarahisar," in İ. Küçükkurt et al., eds., *Afyonkarahisar Kültürü*, vol. 1, Afyon Kocatepe Üniversitesi Yayını 35 (Ankara, 2001), 113–24; P. Linscheid, "Early Byzantine Textiles from Amorium, Anatolia," *Archaeological Textiles Newsletter* 32 (Spring 2001), 17–18; and R. Ousterhout, *Master Builders of Byzantium* (Princeton, N.J., 1999), 89 and fig. 56. One may also note the publication of the coin collection of the Bolvadin Municipal Museum: R. Ashton, C. S. Lightfoot, and A. Özme, "Ancient and Mediaeval Coins in Bolvadin," *Anatolia Antiqua* 8 (2000): 171–92.

² The team comprised nine archaeologists, conservators, and students, of whom seven were Turkish, one British, and one German. Their names are Asst. Prof. Dr. Ayşe Çalık-Ross (assistant director, University of Anatolia, Eskişehir),

Yalçın Mergen (archaeologist, University of Anatolia, Eskişehir), Asst. Prof. Dr. B. Yelda Olcay (glass specialist, University of Anatolia, Eskişehir), Dr. Johanna Witte-Orr (fresco specialist), Sabri Aydal (archaeologist, Antalya Archaeological Museum), Emre Eser (student conservator, Başkent Vocational High School, Ankara University), and Banu Büyükgün (archaeology student, University of Anatolia, Eskişehir). Visitors to the excavations included Seracettin Şahin (director, Afyon Archaeological Museum), Hatice Bilgiç (Middle East Technical University, Ankara), Ayhan Çetin (Emirdağ High School), Özgül Gurbuz (University of Anatolia, Eskişehir), Nurdoğan and Zeliha Aydoğdu, and Petra Linscheid (Freie Universität Berlin).

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hanna Witte-Orr took the opportunity to inspect the panel as part of her study of the church frescoes (see below, pp. 283–84). Another major development was that Sabri Aydal (from the Antalya Museum) initiated a three-year program to survey the whole site and so produce a new detailed topographical and archaeological plan of Amorium. Just over half of the site was surveyed, including the whole of the Upper City, the Lower City Enclosure, and the Lower City Church. Work will continue in 2001, and once complete the new site plan will provide a systematic grid in which we will be able to locate trenches, surviving visible remains, and other important features such as the numerous wells that are dotted around the site. With the help of such a plan the expectation is that a better understanding of the overall layout of the city can be achieved. It may also enable us to make some pertinent observations on the course of events at the siege of Amorium in the summer of 838 by combining the new topographical data with the surviving literary accounts.

THE LOWER CITY CHURCH FRESCOES (BY JOHANNA WITTE-ORR)³

Between 1990 and 1996 a large quantity of fresco fragments and a number of stone blocks that had fresco fragments adhering to them were excavated in the Lower City Church.⁴ The majority of the loose fragments were found in the eastern part of the nave and in the south aisle; almost all of the blocks with painted plaster were found in the south aisle, especially in the central bay. Most of the fragments are small, with a painted surface of about 2–5 cm², but

some of the fragments on the stone blocks are larger, measuring up to 28 × 27 cm. Comparatively few pieces of fresco were recovered from the remaining areas of the church, and most of them were very small. However, two larger fragments were also taken from walls in the church in 1993 under the supervision of the conservator, Karen Barker; one of them was on wall 27 (Context A2-2), and the other was on the nave side of the nave west wall (AM92/A1-10). In the west bay of the south aisle, the largest fragment of all remains *in situ* on the south wall (AM96/A9-9).⁵

It was originally planned to group the fragments by their contexts and plaster layers, and then to try to determine what the frescoes might have shown and what their arrangement on the walls was. It was hoped in this way to reconstruct the church's program of painted decoration and so add more to what is already known about the history of the building. The results were somewhat disappointing for, despite the sizable amount of fresco that was recovered during the excavations, it has not proved possible to reconstruct any large panels from the surviving fragments.⁶ It was found that many gaps exist between fragment clusters, while the different layers of plaster and paint on many of the fragments presented further difficulties. Nevertheless, some valuable information has been obtained from the work conducted in 2000. The preliminary results are presented here, but further work, planned for 2001, is required before any final conclusions can be drawn. In the second season a new approach will be adopted; the first task will be to focus on several groups of stone blocks with related paintings, and then to try to bridge gaps between them by working with fragments from all plaster and paint layers at the same time.

Although Byzantine painting methods have been documented in only a few rare cases, it should be possible to place a fresco in relation to others by observing the characteristic methods used by an individual painter and by com-

³ I would like to thank Chris Lightfoot and Eric Ivison for inviting me to work on the fresco fragments. The term *fresco* is used here in the sense of the work of a master painter, as opposed to *wall painting* as the work of an untrained individual. There is no indication that the paintings are frescoes in the Italian sense of a "good fresco," painted on fresh plaster without an added medium. For a thorough description of Byzantine painting methods which often included both fresco and secco work, see D. C. Winfield, "Middle and Later Byzantine Wall Painting Methods," *DOP* 22 (1968): 74–79; M. Restle, "Maltechnik," *RBK* 5 (Stuttgart, 1995): 1241 f, 1248 ff, 1255 f. On the technique used in the Cappadocian cave churches, see S. Kostof, *Caves of God: Cappadocia and Its Churches* (Cambridge, Mass., 1989), 150.

⁴ A preliminary survey and arrangement of this material was carried out by Christine Zitrines in 1996; *DOP* 52 (1998): 329.

⁵ For the preliminary excavation report on this panel, see *DOP* 52 (1998): 325 and fig. 3.

⁶ A study of the mosaic fragments found in the church produced a similar negative result. Even if only the central dome and/or the apse were decorated with mosaics, they still would have taken up a very large area. The fragments and tesserae that have been found would cover only a fraction of this space.

paring them to others. Many such details (e.g., preliminary incised sketches or the layering of color coats) can easily be seen on the Amorium fragments, whereas it is much harder to see them on intact paintings still *in situ* on a wall. The observed painting methods indicate clearly that a master painter was at work in the church at Amorium. The detailed documentation of the painting methods could also highlight differences between separate painting phases, thereby making them more obvious than a study of the different layers and their paintings alone would permit. What follows is a description of the observed work and painting methods, and a discussion of some examples of the fragments and fragment groups with important details that allow some insight into what could have been the content of the paintings.

1. Wall Structure: Plaster and Paint Layers

The backs of the painted plaster fragments show that they covered not only masonry walls built of large stone blocks but also walls made up of an assortment of smaller stones, flat bricks, *spolia*, and a good deal of mortar. The plaster layer over these sections of wall is much thicker than that over the masonry walls, partly because the bricks in particular have a higher porosity. This would have led the plaster to dry more quickly, which was apparently not desirable.⁷ Most of the plaster in all layers contains chaff (bits of straw or grass) in varying amounts.⁸ Since the color and consistency of the plaster show only minor variations, differences in the amount of chaff added to the plaster can best be explained as an indication of the work process, whereby small batches of plaster were mixed up and used immediately. Some fragments found in the south aisle, however, have a second plaster layer that contains so great an amount of chaff that they break apart easily. This might be taken to indicate a different work process and, perhaps, a different date for the painting, but the frescoes on this type of plaster still need to be compared closely with the other second-layer paintings to see whether

there is an obvious difference in color and painting technique. A few plaster and painting fragments found in the northwest corner of the church (Contexts AM90/A4-2 and AM90/A4-4) do not contain any chaff at all but have a brick-dust or sand filler instead. Moreover, the paint colors and technique used on these pieces are also different from all other fragments. This could signify either that they belong to a different group of painters and, perhaps, a different date or that the fragments fell into the church area from a separate room or building. Finally, a very small number of fragments show a plaster with a very uneven (unleveled) surface and no painted decoration. They resemble the mud-plaster that is still in use in the village today.

It was immediately apparent both from the loose fragments and blocks and from the surviving panel in the south aisle that the church had been decorated several times in the middle Byzantine period. At least two successive painting phases can be identified, but in a few instances even a third painted layer has survived. A new layer of plaster was applied over the older surface and painted; in many cases not much of the older layer has survived or has yet been identified, but traces of the painted surface are preserved on the back of the newer plaster.⁹ Such traces appear on only a small fraction of the fragments. It is possible to conclude, therefore, that in many cases none of the older pigments became detached from their original layer when the newer plaster separated from it, and this would mean that the adhesion between old paint and new plaster was not very strong. Many other fragments show that the plaster had been applied to a smooth surface, but since there are no paint traces it is difficult to tell whether there were bare stone blocks underneath or whether the older painted layer underneath remained intact on the wall. In general, it seems, the newer plaster layer was applied directly over the older paintings without any further preparation; there are no hatch marks or deep scratches cut into the old paint surface nor any trace of washing of the walls, both of which would allow stronger adhesion between the old paint and the new plaster. In

⁷ Winfield, "Wall Painting Methods," 67, 79.

⁸ On binders and fillers in plaster, see Winfield, "Wall Painting Methods," 64–69. The plaster used in the Amorium church is no different.

⁹ In the following discussion, "layer 1" indicates the older or first layer of plaster; "layer 2" refers to the layer of plaster and paint on top of "layer 1."

fact, some of the plaster fragments with smooth backs show signs of a very faint grayish layer, which looks more like dust or dirt than pigment, suggesting that the grime of several years had accumulated and had not been washed off before the next plaster layer was applied.

In both painting phases only a single plaster layer was applied, which acted as both undercoat and as the surface to be painted. Bits of chaff show through the thinner coats of paint and in some cases have become detached, leaving tiny rectangular holes in the painted picture. This is a shortcut and is documented for other sites with middle Byzantine paintings; ideally, a very white and fine-grained thin paint surface would be applied on top of a much coarser leveling plaster.¹⁰ It was possible to use this plaster as a paint surface only because it is very light-colored and fine-grained (except for the chaff), and had been leveled carefully.

One fragment of plaster recovered from the area of the bema was found to contain a glass tessera that matches those used in the ceiling mosaics. The mosaic setting bed is made up of plaster with a consistency and color very similar to that used underneath the paintings. Likewise, there was only one layer of plaster under the mosaics, used as both leveling layer and setting bed.¹¹ It may be assumed, therefore, that the mosaics were installed first, before the walls were plastered and painted (and, perhaps, even before the floor was installed), but it is clear that the church must have been painted at the time the mosaics were set. Probably, the same scaffolding was used by both mosaicists and painters. This also indicates that a number of painters and mosaicists were at work.¹²

When the middle Byzantine church was constructed, the masonry was painted with red

decoration. Architectural features such as window openings, wall joints, pier corners, and arches were decorated with red lines and circles; since these would not have required templates or sinopia, the red line decoration cannot be considered as a preliminary sketch for the frescoes that followed. It is more likely that an interval elapsed between the time the renovation of the church building was completed and the time the mosaicists and painters started their work. In the meantime decoration of some kind, however simple, was considered desirable.¹³

For the moment the question of whether the second plaster and paint layer was part of a general redecoration of the church remains open. The same pink color scheme for ornamental areas as on the second layer decoration of the arch fragment (Figs. 1, 2) was used on small fragments from a different area of the south aisle and, in this case, on a first layer of plaster. This could indicate that gaps in layer 1 were covered over during the redecoration with layer 2. If the layer 2 paintings were part of a small local redecoration (i.e., retouching of icons or a change in picture content in a few places), ornaments on window frames and architectural elements would not have been included.

2. Paintings: Technical Details

The framework for the pictures was drawn on the unpainted plaster with watery yellow paint, and the area was then painted over with background and frame colors. The painters constructed figures with the help of guidelines incised into the fresh plaster and used a compass to incise an outline circle for the nimbus. They also used thin red paint to sketch faces.¹⁴

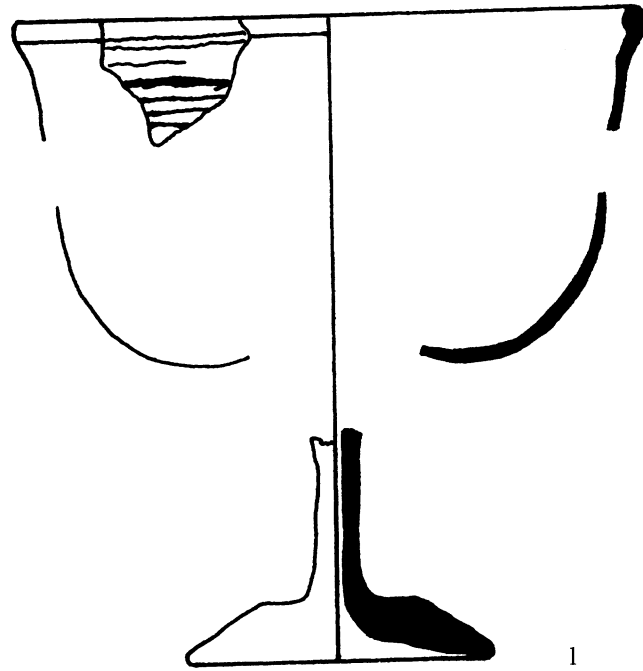
¹⁰ Restle, "Maltechnik," 1247 f; Kostof, *Caves of God*, 147. Compare the list in Winfield, "Wall Painting Methods," 67 f, table 2; most churches in Asia Minor show paintings on only one layer of plaster.

¹¹ Generally, three layers of plaster were used underneath mosaics, two as leveling layers and the third as the setting bed; see D. Mouriki, *The Mosaics of Nea Moni on Chios* (Athens, 1986), 94–97. The Amorium mosaics show an unexpected and unusual shortcut to this technique.

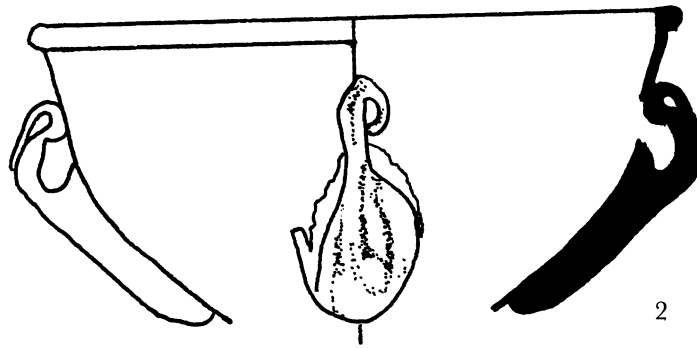
¹² On the relations between mosaicists and painters, see Restle, "Maltechnik," 1265. It has been suggested that mosaics and paintings could have been the work of the same artist; see Winfield, "Wall Painting Methods," 91; L. James, *Light and Colour in Byzantine Art* (Oxford, 1996), 26 f; S. H. Young, "Relations between Mosaic and Fresco Technique," *JÖB* 25 (1976): 269–78.

¹³ Preliminary decorations are known from other churches, for example, the cave churches of Cappadocia: see Kostof, *Caves of God*, 93, 146, 253 note 1; and in Egypt: see K. Innemée, "The Iconographical Program of Paintings in the Church of al 'Adra in Deir al Sourian," in M. Krause and S. Schaten, eds., *ΘΕΜΕΛΙΑ. Spätantike und koptologische Studien Peter Grossmann zum 65. Geburtstag*, Sprachen und Kulturen des christlichen Orients 3 (Wiesbaden, 1998), 144. The *Vita S. Pancratii*, in describing the construction of the martyrion church for the saint, mentions that a year elapsed between the completion of the construction and the decoration with biblical scenes; see C. Mango, *The Art of the Byzantine Empire, 312–1453: Sources and Documents* (Toronto, 1986), 138.

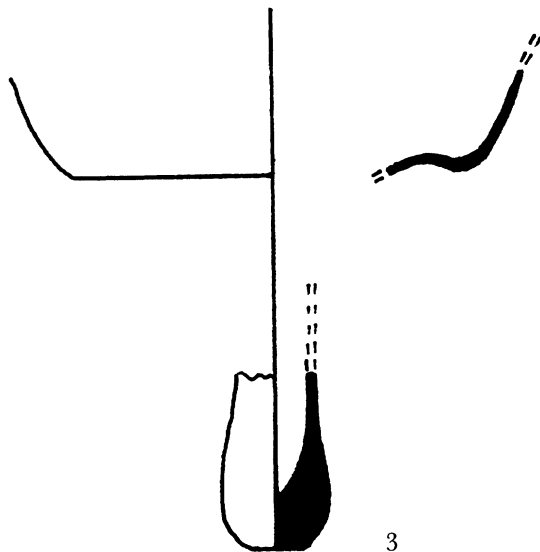
¹⁴ Painted drawings: Restle, "Maltechnik," 1265 f; Winfield, "Wall Painting Methods," 80–96, pls. 4–10. Incised



1



2



3



4

Scale 1:1

Fig. A Glass finds from 1998 (drawing: B. Y. Olcay)

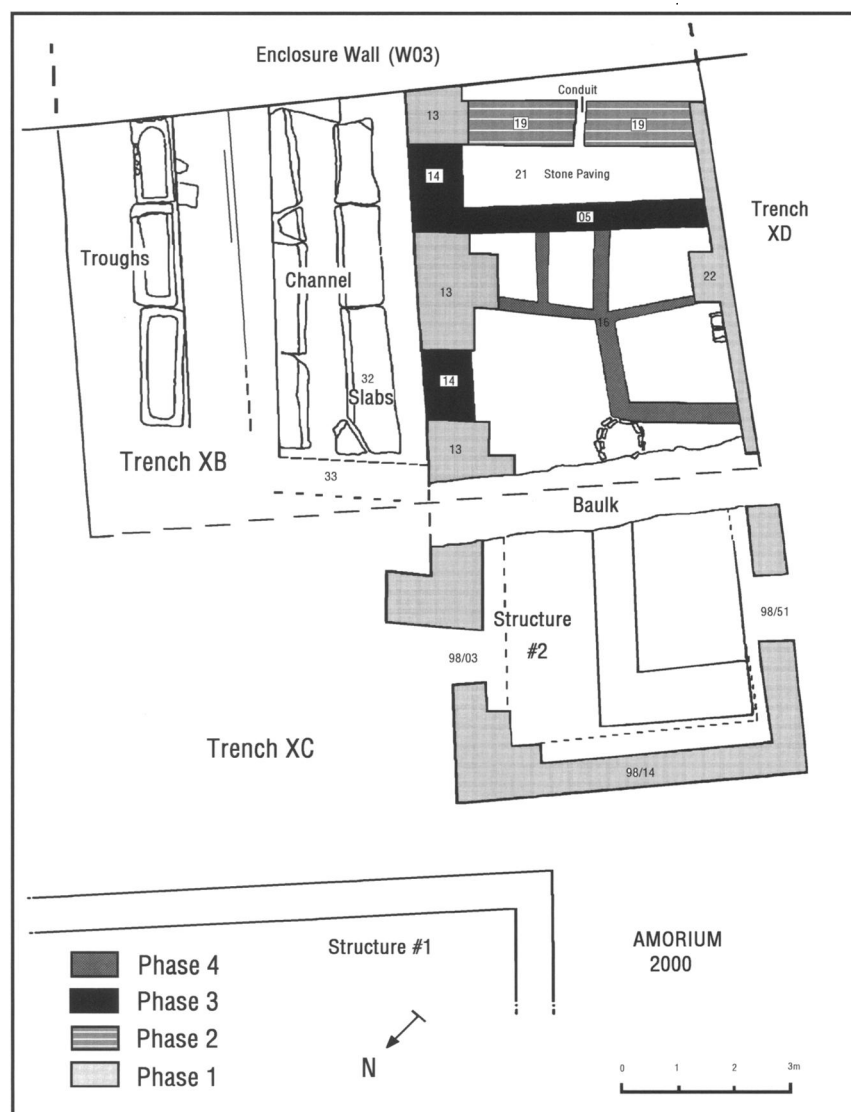
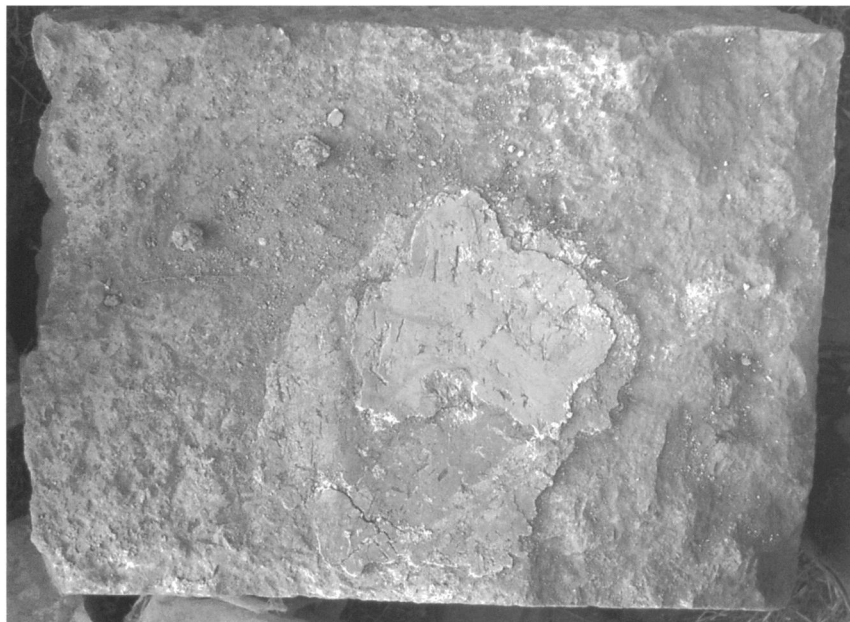


Fig. B Plan of Trench XD and XB (drawing: Y. Mergen)



- 1 Block PP024, Context AM96/A8-17, wall block 2, lower left corner block of a blind arcade or window frame with fresco decoration in two layers (digital image: J. Witte-Orr)



- 2 Block PP007, Context AM96/A8-6, block from a blind arcade or window with fresco decoration in two layers (digital image: J. Witte-Orr)



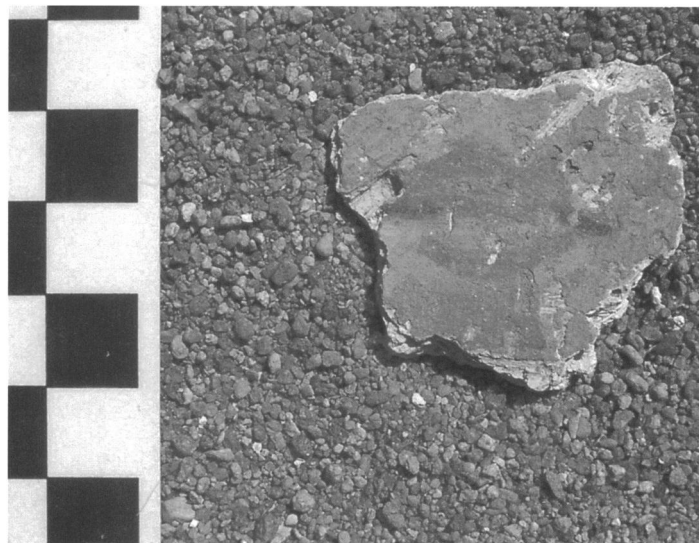
3 Fragments of an unfinished fresco with figural decoration (photo: C. Zitrides)



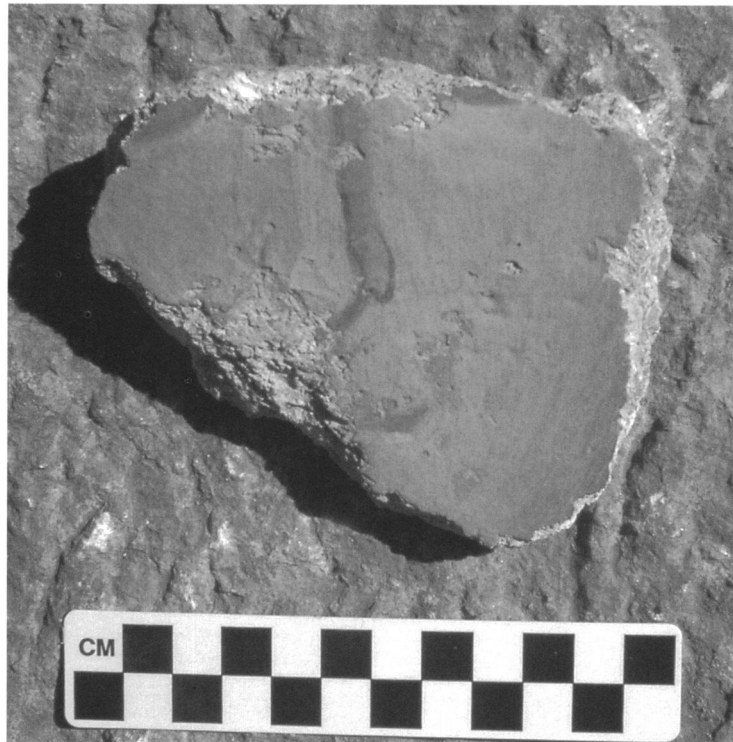
4 AM96/A9-9, fresco in situ on the south wall of the church (digital image: J. Witte-Orr)



5 AM91/A3-27, fragments of an inscribed scroll (digital image: J. Witte-Orr)



6 AM 96/A8-27, face fragment with mouth and nose tip (digital image: J. Witte-Orr)



7 Face fragment, context unknown (digital image: J. Witte-Orr)



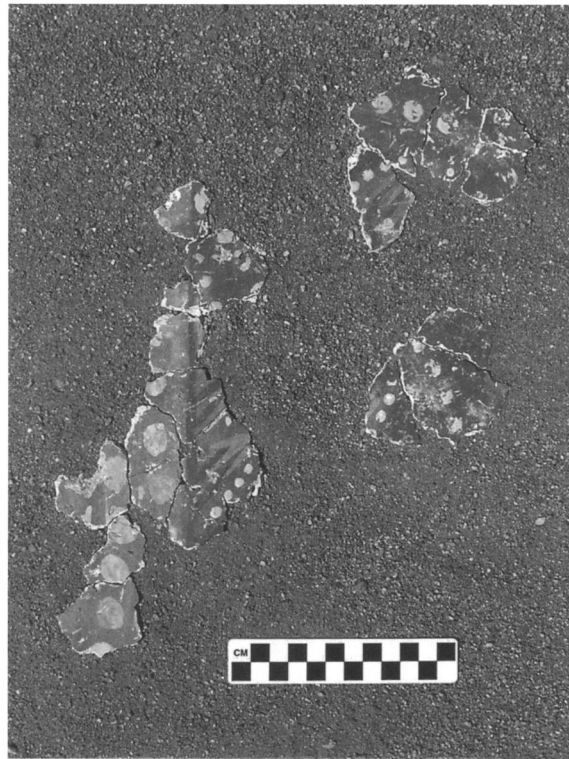
8 Two fragments showing part of a face and nimbi (photo: C. Zitrides)



9 AM91/A3-27, fragment of the second inscription (digital image: J. Witte-Orr)



10 AM91/A3-27, further fragment of the second inscription (digital image: J. Witte-Orr)



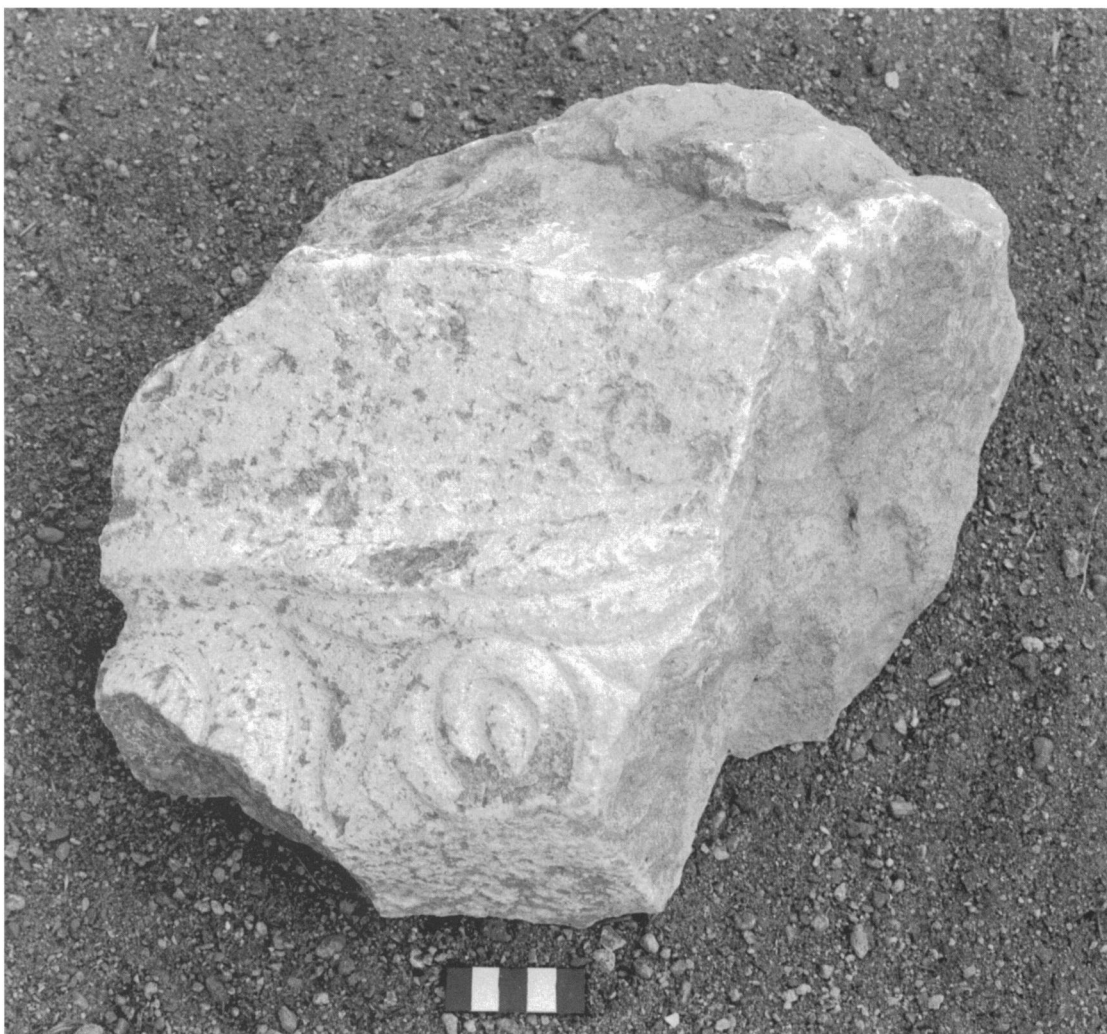
11 AM91/A3-27, fragments of red and yellow ornamented garments belonging to a scroll bearer (digital image: J. Witte-Orr)



12 A follis (SF4024) of Nikephoros II Phokas from Trench XD (AM00/02/15-16; photo: C. S. Lightfoot)



13 The inner face of the Enclosure circuit wall, W03, looking south (AM00/02/9; photo: C. S. Lightfoot)



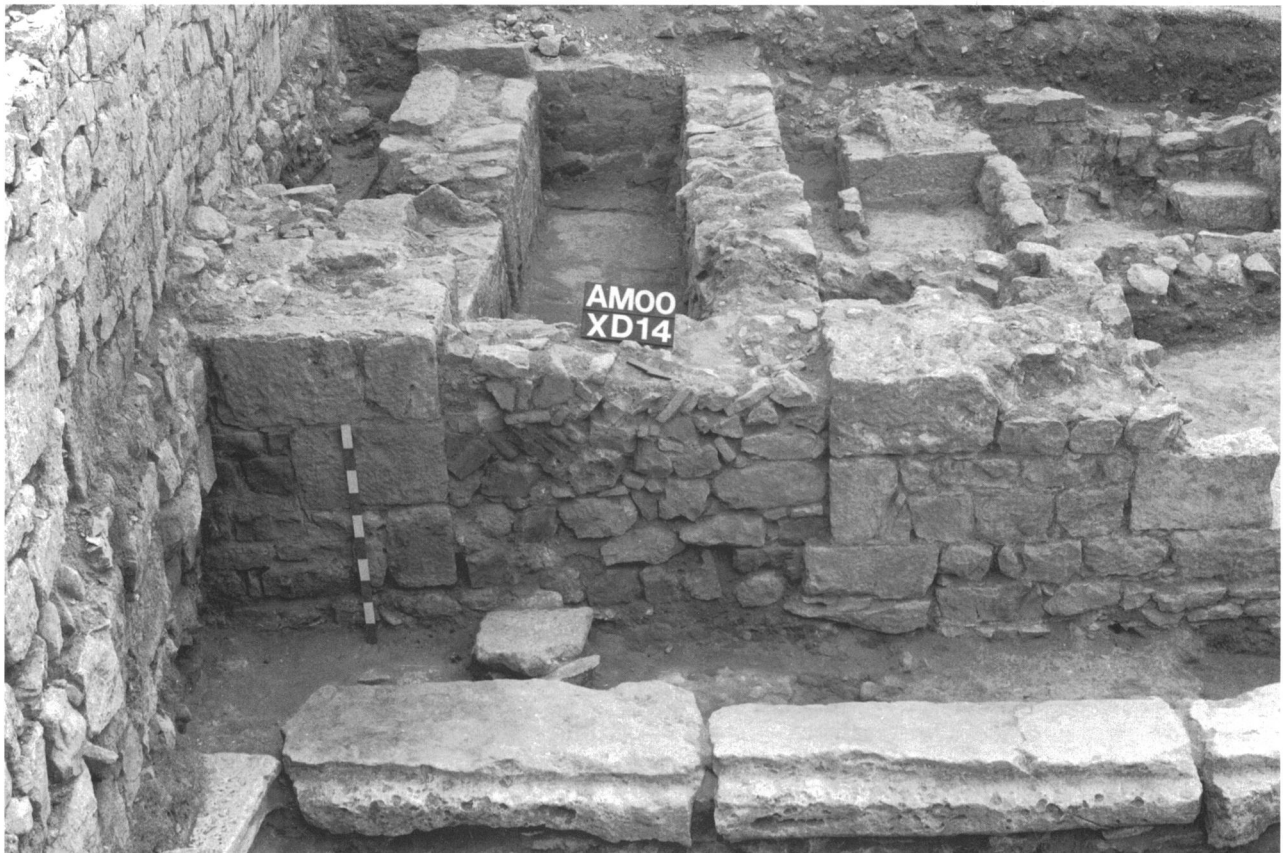
14 An Ionic impost capital fragment, T1519 (AM00/01/16A; photo: C. S. Lightfoot)



15 Trench XD, Structure 2, Context 21, paved floor in situ, looking northeast (AM00/02/3; photo: C.S. Lightfoot)



16 Trench XD, showing paving slab at top right (AM00/03/8; photo: C. S. Lightfoot)



17 Trench XD, looking southwest, showing wall (W13) of Structure 2 with later blocking (W14); hydraulic mortar visible on W22 and Context 21 at rear (AM00/02/35; photo: C. S. Lightfoot)



18 Trench XB, channel, looking toward the Enclosure circuit wall (AM00/02/26; photo: C. S. Lightfoot)



19 Trench XB, channel, looking from the Enclosure circuit wall (AM00/02/32; photo: C. S. Lightfoot)

A small fragment (Fig. 3) documents an unfinished painting; the garment folds on this piece are sketched with thin green lines and the background blue has been painted beside it, but the color coats for shadows, middle ground, and highlights of the folds are missing. The large fresco fragment on the south wall (Fig. 4) and fragments of two other figures also show that the background was painted after the picture had been sketched and that colors, details, and outlines of figures and picture frames were added afterwards (see below). Several fragments show that a black background color was applied first and later was covered with a bright blue; the blue appears to have had a pastier consistency than the black, and has more lustre.¹⁵ There is no trace of black under the blue background of the figure on the south wall, and the unfinished area to the left of this picture shows that this method was not used here.

The surviving fresco (Fig. 4) in the western bay of the south aisle is painted on a third layer of plaster that covers part of the second and first layers. The picture has a dark blue background with a slightly greenish cast within a red frame, set off from the background by a thin white line. The area to the left of the frame was never completely painted; one brush stroke of dark blue tapers off halfway down, and the remainder of the plaster is unpainted. It seems that the painter was not asked or did not have time to paint another panel to the left. It is possible that the panel was a patch applied only to this particular spot on the south wall, either to replace an earlier (now unwanted) image or to repair an area of damage. However, it may represent work in process, in which the new plaster layer was applied across the entire wall of the bay and painted panel by panel. In this case, it would seem that the surviving picture was finished on one day, and that the painter failed to come back and start on the next panel to the left on the following day. Why this was so is a mystery.

guidelines: *ibid.*, 96–99, pls. 11–12. Table 2 gives a list of some churches with frescoes in Asia Minor; incised lines were apparently not used in Cappadocia, but they are found in Constantinople, Trebizond (Trabzon), and elsewhere in the Pontos, starting in the 10th century, and, more often, in the 12th century.

¹⁵ Theophilus, in *De diversis artibus*, describes the painting of background colors in exactly this way; the same method can be found in many other frescoes, see Winfield, "Wall Painting Methods," 100.

A blue, sometimes sky blue, background seems to have been used for all pictures, but in the lower part of the pictures it changed to a green ground. There are two exceptions: the fragment from the west wall of the *naos* shows a burgundy red background above the lower frame line, and in the picture on the south wall (Fig. 4) the blue background continues to the bottom of the panel. The pictures were framed by a red border, set off from the blue and green picture background by a narrow white line. The fragment from the *naos* wall, as well as several other smaller fragments, shows that below the main picture area there was a low dado painted with an imitation of diagonally veined marble slabs. Below the imitation marble dado there was a band of black or red, perhaps intended as an imitation of a molding in a different stone. Some architectural features in the south aisle, such as windows or niches, were decorated in the second layer with ornamental patterns in a light pink, burgundy, and red color scheme (Figs. 1, 2). The first layer was painted with yellow, red, and black, but not enough is visible to detect a pattern. For the lines of text in inscriptions (Fig. 5), guidelines were pressed into the plaster with a cord. In one case this seems to have happened when the plaster was fairly dry so that the cord left an impression with very broken edges.

For the faces and hands of figures, and for some of the garments, the paint was applied in several thin coats with a very fine brush. In those cases where many different colors were applied in one spot, the surface seems much smoother, since the plaster and chaff have been covered over by many coats. Several coats of different colors in one spot do not necessarily indicate that a picture was repainted. However, in one case the colors and lines of the uppermost coat are so different from the one it covers that one should suspect a repainting. Faces and body parts were painted with an olive green ground color that was overpainted with pink, peach, red, and white for details (Figs. 6–8). Some of the images seem to have had a much larger format and were painted with wider brushes, which could indicate that they had a position higher up on the walls. Several fragments of faces were identified, and measurements of nose length, chin to nose tip distance, and eye width or nimbus diameter were taken

to calculate the head and body size.¹⁶ On the smallest piece (Fig. 6), a very small mouth with the tip of the nose and the chin are visible: this must have been the face of a small person or child. Another piece shows the face of a young adult (Fig. 7), and on a third fragment only the upper left side of a face with eye, eyebrow, and wavy hair is preserved (Fig. 8). It seems reasonable to assume that the painter used proportional rules for figures in which body height is a multiple of face and nose lengths. It can be calculated, therefore, that the body size of the figures to which the latter two fragments belonged was approximately 1.60–1.70 m, that is, life size. The figure still *in situ* on the south aisle wall (Fig. 4) can be reconstructed to a similar size. If the fragment of the smaller face (Fig. 6) belonged to an infant Christ seated on his mother's arm or lap, his body size would have been 0.70–0.80 m; if, however, this represents a different individual in a standing position, his or her body size would have been 1.10–1.20 m.

At present only a few observations can be made about the picture content. The fragment with eye and wavy hair (Fig. 8) shows two overlapping nimbi, so it must have been part of a picture showing two people positioned close together. This in turn means that we have here a fragment of a narrative representation, not an image of two saints standing next to each other. The fragments of the first inscription (Fig. 5) mentioned below must have been a text on a scroll that was held in front of his left leg by a richly dressed figure. To the right of the scroll the background is black (perhaps the black underpainting for a blue background), and there is no trace of further picture details on this side. From comparison with similar compositions in other frescoes and mosaics, this figure can be recognized as a prophet, and, because of his

richly ornamented garments, he may be identified as Daniel, or perhaps David or Solomon.¹⁷ Dress details, such as ornamented borders imitating gold embroidery with jewels on tunic and cloak, also allow an identification of the figure still *in situ* on the south wall (Fig. 4). It must have been a person of higher rank and most likely represents St. Barbara or St. Catherine of Alexandria. It is less likely to be a donor portrait.¹⁸

3. Fragments of Inscriptions: Contexts AM91/A3-27 and AM91/A3-31¹⁹

Among the large number of fragments from these contexts are parts of two inscriptions. One is painted with thin black paint on a white and slightly greenish background; the other is painted with stronger black paint on a yellowish

¹⁷ David, Solomon, and Daniel appear in richly ornamented clothing and hold scrolls in the much later Elmalı Kilise; see M. Restle, *Die byzantinische Wandmalerei in Kleinasien*, vol. 2 (Recklinghausen, 1967), pls. 161, 167; cf. also O. Demus, W. Dorigo, A. Niero, G. Perocco, and E. Vio, *Venise. Saint Marc* (Paris, 1991), 76, 94. Daniel is usually dressed in "Persian" style with a short tunic, Phrygian cap, leggings, and a cloak; see K. Wessel, "Daniel," *RBK* 1 (Stuttgart, 1966): 1113–20.

In general, prophet figures holding scrolls with legible texts became part of the church decoration in the 6th century. Early post-iconoclastic examples are provided by the large prophet figures on the two tympana of Hagia Sophia; see Mango, *Materials for the Study*, Diagrams III, IV, and Teteriatnikov, *Mosaics of Hagia Sophia*, figs. 25, 26. For another one in a side room, see P. A. Underwood, "A Preliminary Report on Some Unpublished Mosaics in Hagia Sophia: Season of 1950 of the Byzantine Institute," *AJA* 55 (1951): 368 f, pl. 17. Photios, in his description of the church of the Virgin of the Pharos, mentions a prophet, who "though silent, cries out his sayings of yore"; see Mango, *The Art of the Byzantine Empire*, 186 (Mango identifies him by the quotation from the Psalms as David).

¹⁸ In the Leo Bible, the patron of the book, Leo, and his brother Constantine are shown wearing red cloaks with gold borders. Leo's tunic is white and has gold brocade borders at hem and wrist: see J. Lowden, *Early Christian and Byzantine Art* (London, 1997), figs. 111, 112. St. Barbara: for example, in Ayvalı Kilise/Güllü Dere (913–920), M. Restle, *Byzantinische Wandmalerei*, vol. 3, pl. 340; in St. Barbara-Tahtalı Kilise/Soğanlı (1006 or 1021), *ibid.*, 3: pl. 433. St. Catherine: for example, in Göreme, Chapel No. 9 (10th century), *ibid.*, 2: pl. 129. The two saints are shown facing each other on one arcade intrados in the New Tokalı Kilise: A. W. Epstein, *Tokalı Kilise. Tenth-Century Metropolitan Art in Byzantine Cappadocia* (Washington, D.C., 1986), 67 (no photo). Further examples: H. Maguire, *The Icons of Their Bodies: Saints and Their Images in Byzantium* (Princeton, N.J., 1996), 28 ff, figs. 24, 25.

¹⁹ It may be noted that an anonymous follis (SF1534) of class A.1 or A.2 was also recovered from context A3-31 in 1991.

¹⁶ The calculations are based on the proportional systems of Dionysos of Fournia and Panselinos, as described by the Winfields, and a comparison of these two systems with the proportions used in several of the Hagia Sophia mosaics; see J. and D. Winfield, *Proportion and Structure of the Human Figure in Byzantine Wall-Painting and Mosaic* (Oxford, 1982), 54–66, 67–93; C. Mango, *Materials for the Study of the Mosaics of St. Sophia at Istanbul* (Washington, D.C., 1962), pl. 50: Alexander, pl. 62: Ignatios the Younger, pl. 70: St. John Chrysostomos, pl. 72: St. Ignatios Theophoros, and pl. 106: apse mosaic. For the same mosaics, see also N. B. Teteriatnikov, *Mosaics of Hagia Sophia, Istanbul: The Fossati Restoration and the Work of the Byzantine Institute* (Washington, D.C., 1998), fig. 27: Chrysostomos, fig. 28: Ignatios, fig. 38: Alexander, and fig. 49: Virgin and Child.

ground and is underlined with umber horizontal lines.

First inscription (Fig. 5), letter height: 5.5–6.0 cm. Line width, short umber lines: between 0.3 and 0.25 cm; bright red lines: 0.5 cm; gray outline on the left side of the scroll: 0.75 cm. The painting is on a single layer of plaster; the back of the plaster shows that it was attached to walls built of large stone blocks next to smaller stones and bricks.

Second inscription (Figs. 9, 10), letter height: approximately 5 cm (only the upper half of the letters remains).

Parts of the first inscription could be joined to fragments of a figure wearing a dark red to reddish-brown garment falling in zigzag folds highlighted in light brown. The garment has a black hem covered with a line of small white dots (possibly representing pearls), and a second yellow garment with double rows of white dots (Fig. 11). In the dark red area of the red garment, incised guidelines can be detected: they must be construction guidelines for the folds. At the moment not enough pieces have been joined together to tell to which area of the figure they belong. The inscription fragments that could be joined together (Fig. 5) show on the left edge of the scroll a cross at the beginning, then C and at the end of this line P. Several lines down (it is unclear how many) there is KAI (the last letter could be the beginning of N instead), and at the beginning of the next line KA. Another piece from the left edge, but not joined, has the beginning COC, and a piece of the right edge ends with TO. Other floating pieces display the letter groups: CO TOC IΦ.

The second inscription, on a sienna ground and underlined by umber lines, may be part of another prophet scroll or an evangelist's book, but it could also be something entirely different.²⁰ Not enough is preserved to determine the format, except that it was arranged in at least three lines. Two letter groups are legible: one of them can be restored as ...CEBP... or ...CEPB...

²⁰ A TLG search for the word fragments ...c εβρ... or ...c εβρ... and ...ceβρ... or ...ceβρ... in the text of the Septuagint resulted in only a few quotations. None is typical of those used on prophet scrolls; see A.-M. Gravgaard, *Inscriptions of Old Testament Prophecies in Byzantine Churches: A Catalogue* (Copenhagen, 1979). Either the fragments did not belong to a scroll, or it carried an unusual quotation. My thanks go to A. Alexakis, G. Baloglou, and M. Stein for help in the TLG database search.

(Fig. 9), the other one can be read as TIA^N or TIA^Y (Fig. 10).

THE GLASS FINDS FROM 1998

(BY B. YELDA OLCAY)

Almost all of the glass found during the 1998 season was in the form of small, broken fragments.²¹ Most of them came from Trench XC in the Enclosure, but another smaller group was excavated in Trench LC6 behind the Lower City walls, while a few fragments were also recovered from the Lower City Church. In general, it can be seen that the vessels to which the fragments belong were free-blown and that, since the fragments contain many bubbles, the quality of the fabric is relatively poor. Most of the finds, as well as being very small and fragmentary, displayed a surface layer of weathering and iridescence. The exception to this general observation can be found in the fragments of window glass recovered from Context 91 in Trench XC. These were both larger in size and less weathered than the majority of the vessel fragments. The most common color used for the glass was green, with various shades being represented, but some fragments also showed up as blue-green, dark blue (particularly prevalent for applied trails), and light yellow. The most common form of decoration found among the fragments was the applied trail, most often in dark blue glass, which occurred on the rim, around the body, and on the base. Diagnostic vessel fragments included rims, bases, footed bases, lamp stems, handles, and neck fragments.

The preliminary study of the material revealed that some fragments found in the same context and trench belonged to the same vessels. It was then possible to make a paper reconstruction of two different types of lamp (Fig. A, nos. 2–4) and a footed cup or goblet (Fig. A, no. 1). The latter vessel may also be viewed as a lamp.

The lamp fragments form one of the easiest groups to identify. For the present, three different types can be distinguished: (1) stemmed lamps that were used in polycandela, (2) hanging lamps with handles, and (3) goblets that

²¹ A preliminary study of the 1998 finds was also carried out by Dr. M. A. V. Gill during the excavation season; cf. *DOP* 55 (2001): 394–98 and fig. L.

may be considered as lamps.²² The stems of the first type of lamp are easily recognizable, and at Amorium these finds can be divided into two groups. The first type has a solid stem, for which parallels found elsewhere are most often dated between the middle of the eleventh and the beginning of the thirteenth century. The best examples are provided by the excavations at Saraçhane in Istanbul and at the church of St. Nicholas at Demre (Myra) in Lycia.²³ Other examples have a similar solid stem but with a rounded knob at the end. This variant, although rare, has been recorded at Amorium in previous seasons.²⁴ The knobbed stem type may also be dated to the eleventh century, whereas outside Anatolia they are usually placed earlier in the ninth and tenth centuries.²⁵ So the finds at Amorium may be tentatively assigned to the later phases of Byzantine occupation in the tenth and eleventh centuries.

The second lamp type distinguished among the finds from Amorium is cylindrical with a thick, slightly pointed base and a hollow stem expanding upwards.²⁶ This type is found throughout the Middle East; similar examples outside Anatolia have been found at Apamea in Syria, Caesarea Maritima in Palestine, and on Cyprus, but the closest parallel to the Amorium material is offered by a find from the excavations at the church of St. Nicholas at Demre that is dated by context to the sixth–eighth cen-

tury.²⁷ In publications the type is usually assigned a sixth- or seventh-century date.²⁸

Another type of lamp that is attested among the finds has suspension handles. The reconstructed example (Fig. A, no. 2) has an everted and folded rim, and a body that tapers toward the bottom, while the handles are applied to the sides. Close parallels, in both shape and handle design, can be found among the glass from Demre, while recent excavations at Tarsos have also produced similar finds.²⁹ Further work is required before an exact date can be given to the type, but it is likely that it belongs to the middle Byzantine period.

Foot and base fragments are the most important indicators for establishing a typology of the cup and goblet finds from Amorium. Preliminary results from the study of the 1998 finds indicate that two types are represented. The first is shaped as a massive goblet complete with footed base (Fig. A, no. 1). It has been possible to find published parallels of this type. Similar examples found at Gerasa in Jordan are tentatively dated to the eighth century and later.³⁰ Another close parallel has been noted at Demre.³¹ A second type of goblet is attested among the bases; this has a folded outer edge to the base. Parallels from sites both in Anatolia and elsewhere indicate that this type of base is characteristic of goblets produced in the fifth–seventh centuries.³² Significantly, it does not appear to be found in later contexts.

²² The finds from the previous seasons (1987–97) have been studied by Margaret Gill. The publication of her detailed catalogue, including numerous examples of these three types, is expected to appear by the end of 2002; M. A. V. Gill, *Amorium Reports, Finds I: The Glass* (Oxford, 2002).

²³ J. W. Hayes, *Excavations at Saraçhane in Istanbul*, vol. 2 (Princeton, N.J., 1992), 404, nos. 50, 70–71, fig. 152; M. Acara and B. Y. Olcay, “Bizans Döneminde Aydınlatma Düzeni ve Demre Aziz Nikolaos Kilisesi’nde Kullanılan Aydınlatma Gereçleri,” *Adalya* 2 (1998): 253, pl. 1, i–m.

²⁴ Gill, *Amorium Reports*, Part 1, no. 31 (from Trench AB, Context 110); Part 2, nos. 37–39 (from Trench L, Context 390; from Trench UU, Context 48; and from Trench A2-1, Context 10, respectively). These findspots, ranging from the Upper City to the Lower City walls, indicate that such lamps were widely distributed across the site.

²⁵ For a recent discussion of this type, see S. Hadad, “Glass Lamps from the Byzantine through Mameluk Periods at Bet Shean, Israel,” *JGS* 40 (1998): 69 (Type 2), and references in note 12.

²⁶ Gill, *Amorium Reports*, Part 1, nos. 21–24 (all from contexts in the Large Building, Lower City); Part 2, nos. 30–34 (from Trench AB, Context 101; from Trench TT, Context 122; and from various contexts in the Lower City Church).

²⁷ A. Engle, *Light, Lamps and Windows in Antiquity* (Jerusalem, 1987), fig. 19; M. Peleg and R. Reich, “Byzantine City Wall of Caesarea Maritima,” *Atiqot* 21 (1992): fig. 20: 12, 14; J. Taylor and A. H. S. Megaw, “Excavations at Ayios Philon,” *RDAC* (1981): fig. 46; B. Y. Olcay, “St. Nicholas Church Excavation in Demre (Myra) in Antalya, 1989–95. Glass Finds” (Ph.D. diss., Social Sciences Institute, Hacettepe University, Ankara, 1997), 467, pl. II, 4.

²⁸ See Hadad, “Glass Lamps,” 69, 72 (Type 4), and references in note 16.

²⁹ Acara and Olcay, “Aydınlatma,” pl. 2, g. The Tarsos glass finds have already been prepared for publication.

³⁰ C. Meyer, “Glass from the North Theater, Byzantine Church and Soundings at Jerash, Jordan 1982–83,” *BASOR Supplement* 25 (1987): 211, fig. 11, V, X, Y, Z.

³¹ Acara and Olcay, “Aydınlatma,” 255, pl. 3, e.

³² Parallels include finds from the 5th–6th century at Sardis, the 5th–7th century at Anemurium, the 6th–7th century at Demre, the 6th–7th century at Gerasa, and the 5th–7th century at Carthage. A. von Saldern, *Ancient and Byzantine Glass from Sardis* (London, 1980), 58, no. 351, pl. 24: 351; E. M. Stern, “Ancient and Medieval Glass from the Necropolis Church at Anemurium,” *Annales du 9e Congrès de l’Association Internationale pour l’Histoire du Verre* (Liège, 1985), 44–45, pl. 3; Meyer, “Jerash, Jordan,” fig. 8, Y; J. M.

Another reliable indicator for dating purposes is provided by the applied trails that are found on some of the vessel fragments. This decorative element seems to have been in use over a long period of time, beginning in the Roman and continuing into the Byzantine period. Published examples, however, indicate that such trails were especially popular in the seventh–ninth centuries.³³ One explanation for this phenomenon may be the reduced economic circumstances of the Byzantines as a result of the Arab raids on Anatolia. Just as all the other branches of arts and crafts suffered a decline at this time, so glass production was reduced to a relatively basic level. The fabric of the glass made in the seventh–ninth centuries is generally poor, while the addition of trails (usually in dark blue) would have constituted both an easy and a cheap form of decoration. It is likely that the rim, body, and base fragments decorated with such trails that have been found at Amorium belong to the Dark Ages.

Finally, a group of glass that is striking among the finds from 1998 is the window glass, all from Context 91 in Trench XC. These constitute some of the largest fragments of glass so far recovered from the excavations, one reason for their size being the thickness of the panes. A few of the fragments have an original edge. It is clear that these panes were made in flat sheets, a technique that was in use from the Roman period until well into Byzantine times. Until the relative stratigraphy of the context in which the window glass was found has been precisely determined, the date of the Amorium fragments must remain uncertain. Nevertheless, the finds from XC Context 91 constitute an important group to be added to the growing body of evidence for Roman and Byzantine window glass.³⁴

Crowfoot, "Glass," in G. M. Crowfoot, *The Objects from Samaria* (London, 1957), 415, fig. 96: 7; Acara and Olcay, "Aydinlatma," 255, pl. 3, a–d.

³³ Meyer, "Jerash, Jordan," 197.

³⁴ For a general discussion of ancient window glass, see D. Whitehouse, "Window Glass between the First and the Eighth Centuries," in F. Dell'Acqua and R. Silva, eds., *Il Colore nel Medioevo. Arte e Tecnologia. La Vetrata in Occidente dal IV all' XI Secolo* (Lucca, 2001), 31–43. A recent survey concluded that "finds of window glass from the middle and late Byzantine periods are rare"; Ousterhout, *Master Builders*, 151. This, however, does not take into account the Amorium examples recorded in *AnatSt* 46 (1996): 107–8, 109 nos. 8–14, and *DOP* 51 (1997): 296, fig. C. For other examples, see G. L. Davidson, *Corinth*, vol. 12, *The Minor Objects* (Princeton, N.J., 1952), 144–45 nos. 1061–66.

The majority of the glass finds from the excavations conducted at Amorium in 1998 can be assigned to the period between the sixth and eleventh/twelfth centuries. Closer dating of the finds may be possible as the study of the material advances and the stratigraphy of the site comes into sharper focus.

THE COINS (BY CHRIS LIGHTFOOT)

In 2000 a total of twenty-six bronze or copper alloy coins were recorded. They were all cleaned and conserved by Emre Eser; they were then photographed and cast, and finally they were deposited in the Afyon Archaeological Museum on 7 September. Of these coins only five were recovered from the excavations in the Lower City; the remainder were all surface or stray finds, most of which had been picked up by the site guard, Bilâl Eryiğit, before the beginning of the season.

As in previous years, the majority of the finds belong to the Byzantine period. None can be positively assigned to a date earlier than the fourth century. Few coins of the sixth century have been found at Amorium, and so it was gratifying to be able to add a nummus of Anastasios, particularly as this small coin was picked up as a surface find.³⁵ Two more issues belong to the reigns of Herakleios and Constans II in the seventh century, while a third follis, badly corroded on the obverse, may tentatively be assigned to one of the early eighth-century emperors on account of its size, weight, and general appearance.³⁶

Two more issues of Emperor Theophilos,

³⁵ AM00/Surface/SF4012. From the Lower City. AE nummus, A.D. 491–517. Mint of Constantinople. *Obv.* Bust of emperor, diademed and wearing a cuirass and paludamentum, r. *Rev.* Monogram. 10.0 mm; 1.01 g; 6h. C. Morrisson, *Catalogue des monnaies byzantines de la Bibliothèque Nationale, I, D'Anastase Ier à Justinien II (491–711)* (Paris, 1970), no. 1/Cp/AE/02.

³⁶ (1) Herakleios: AM00/XD Context 4 (subsoil)/SF4022. AE follis, class 4, year 27 = A.D. 636/7 (?). Mint of Constantinople. *Obv.* To l., Herakleios standing, facing, holding long cross in r. hand; to r. Herakleios Constantine standing, facing, in chlamys; between them, cross. Very corroded. *Rev.* M; above cross and C; to l., [ANNO]; to r., X/X/II (?); in exergue, [C]ON. 25–23 mm; 7.09 g; –h. Morrisson, *Catalogue des monnaies byzantines*, no. 10/Cp/AE/75.

(2) Constans II: AM00/Surface/SF4016. Stray find. AE follis, class 8 (?), year 13 = A.D. 653/4. Mint of Constantinople. *Obv.* [ENT&T ONIKA]; emperor standing, facing, holding long cross in r. and globe cruciger in l. hand. *Rev.* [M; above, cross; to l., ANA; to r., NEOS]; in exergue, to r., XIII;

both folles of class 1 dated 829–830/1, can now be added to the growing list of coins found at Amorium belonging to the first half of the ninth century; one was found during excavations in Trench XB.³⁷ It may, perhaps, give some indication of the date for the channel and other features (such as the row of troughs) that were subsequently abandoned and sealed below the Enclosure's circuit wall.

The remaining twelve Byzantine coins belong to the tenth–eleventh centuries. Of particular note are the two well-preserved issues of Nikephoros II Phokas from Trench XD (Fig. 12), found in contexts that help confirm the dating of the restructuring of Structure 2 to pre-963.³⁸ Only four anonymous folles were recorded, all surface finds, but of the three signed folles, that of Michael VII is particularly significant.³⁹ Only one other Byzantine coin

dating to after 1071 has been recorded at Amorium—another follis of Michael VII, also a surface find from the preliminary site survey in 1987 (AM87/SF3005).⁴⁰

Two Islamic copper coins were found as surface strays; both are issues of the Seljuks of Rum.⁴¹ One is a fals of Kayka'us b. Kaykhusraw (1246–57), while the other was minted at Ankyra in the name of Kaykhusraw II and is dated A.H. 635 (1237/8). They fit very well with the other Islamic coins found at Amorium.

THE LOWER CITY ENCLOSURE: TRENCHES XD AND XB (BY YALÇIN MERGEN)

Excavation in 2000 concentrated on one small area within the Lower City Enclosure between the circuit wall, part of which had been revealed in 1996 (in Trenches XA and XB), and the trench that had been excavated in 1998 (Trench XC, with extension XBC joining with Trench XB).⁴² The principal aims were to define the limits of one of the two major buildings (no. 2 of Structures 1 and 2) that had been found in Trench XC two years previously, to investigate the relationship between Structure 2 and the Enclosure's circuit wall, and to clarify the relative and absolute dating of the various structures and associated features. The excavated area (Fig. B) lies to the southeast of Trench XC and southwest of Trenches XB and XBC, while its southern limits were defined by the circuit wall. It was designated as Trench XD and measured 8 × 9 m. A 1-meter balk was preserved between the new trench and Trench XC, but, despite this, it was possible to follow the principal walls belonging to Structure 2 from Trench XC through into Trench XD and up to the circuit wall.

An impressive stretch of the inner face of the Enclosure's circuit wall (W03), measuring some 11.5 m in length, has now been revealed (Fig. 13). While cleaning and consolidation work on

to l. (?). 22.0–16.5 mm; 3.06 g; 2h. Morrisson, *Catalogue des monnaies byzantines*, no. 13/Cp/AE/23.

(3) Uncertain emperor, Philippikos or Anastasios II: AM00/Upper City, unstratified/SF4018. From the northern sector of the Upper City (spoil heap). AE follis, year 1 = A.D. 711/2 or 713/4. Mint of Constantinople. *Obv.* [Bust of emperor facing, holding long cross in r. and globe cruciger in l. hand]. Very corroded. *Rev.* M; above, cross; to l., ANN[O]; to r., I; below, A. 22.0–18.5 mm; 3.25 g; 6h (?). P. Grierson, *Byzantine Coins* (London–Berkeley, 1982), nos. 403–404, and cf. a follis of Anastasios II found at Pergamum; C. Morrisson, "Die byzantinischen Münzen," in H. Voegtl, *Die Fundmünzen aus der Stadtgrabung von Pergamon* (Berlin–New York, 1993), 59, no. 822.

³⁷ AM00/XB Context 32/SF4027. From Lower City Enclosure, 27.08.00. AE follis, class 1, A.D. 829–830/1. Mint of Constantinople. *Obv.* * • θε-OFIL' bASIL'; bust facing, bearded, wearing chlamys and crown with cross, holding patriarchal cross in r. hand, acacia in l. *Rev.* M; above, cross; below, θ; to l., XXX; to r., NNN. 30.5–29 mm; 7.76 g; 6h. Grierson, *DOC* 3.1: 433, no. 13. The other coin, also a follis of class 1 (AM00/Surface/SF4009. 29 mm; 7.84 g; 6h), is a stray from the Lower City found by Bilâl Eryiğit during the winter of 1999/2000.

³⁸ (1) AM00/XD Context 17/SF4024. From Lower City Enclosure, 24.08.00. AE follis, class 1, A.D. 963–969. Mint of Constantinople. *Obv.* +nICIFRb ASILeVRω; bust facing, bearded, wearing robe and crown with cross and pendilia; in r. hand, cross scepter; in l., globe surmounted by trefoil. *Rev.* [+JnICHF/enθeω bA/SILeVSRω/MAIωn.; 25–23.5 mm; 8.13 g; 6h. Grierson, *DOC* 3.1: 586–87, no. 7.

(2) AM00/XD Context 20/SF4026. From the Lower City Enclosure, 25.08.00. AE follis, class 2, A.D. 963–969. Mint of Constantinople. *Obv.* +nICIFRb ASIL[E]V[Rω]; bust facing, bearded, wearing modified loros and crown with cross and pendilia; in r. hand, labarum; in l., globe cruciger. *Rev.* +nICH[F]/enθeωβ[A]/SILeVS[Rω]/MAIω[n]; 24.5–22 mm; 4.44 g; 6h. Grierson, *DOC* 3.1: 587–88, no. 8.

³⁹ AM00/Surface/SF4010. Stray find. AE follis, var. a. or b., A.D. 1071–78. *Obv.* Bust of Christ facing, with nimbus cross and holding book; in field, [IC] XC above lateral arms of cross, six-pointed stars beneath them. *Rev.* + MIX AHA [RA]CI[OΔ]; bust facing, bearded, wearing modified loros with collar-piece and crown with cross and pendilia, hold-

ing in r. hand labarum, in l., globe cruciger. 23.5–22.5 mm; 6.31 g; 6h. Grierson, *DOC* 3.1: 818–19, nos. 14a and 14b.

⁴⁰ In 2001, however, another post-1071 coin was found; see C. S. Lightfoot, "Amorium 2001," in G. Coulthard, ed., *Anatolian Archaeology: Research Reports 2001. British Institute of Archaeology at Ankara* 7 (2001): 10.

⁴¹ AM00/SF4006; 20–19 mm; 1.86 g, and AM00/SF4007; 22.5–20 mm; 5.28 g. Both identified from casts and photographs by Dr. Michael Bates, Curator of Islamic Coins at the American Numismatic Society. The Project is very grateful to Dr. Bates for lending his help and expertise.

⁴² *DOP* 52 (1998): 327–28, figs. 9–11; *DOP* 55 (2001): 381–94.

the section of wall uncovered in 1996 was being completed, it was noticed that a fragment of an early Byzantine (probably sixth century) Ionic impost capital had been built into the core of the wall. Since this block (T1519) had become loose and was in imminent danger of falling from the wall, it was removed to the Dig House, where it was subsequently recorded and photographed (Fig. 14).⁴³ This was an important discovery, for it helps to confirm that the circuit wall is a relatively late feature and that its builders were not averse to using earlier *spolia* such as architectural elements in its construction.

Initial stages of the excavation were hampered by the large quantities of rubble that lay immediately below the topsoil. The nature of its composition and deposition clearly indicated that most of this rubble had once belonged to the circuit wall itself and had fallen into the Enclosure either as the upper part of the wall gradually decayed or as a result of stone-robbing activities during the past century.

Structure 2

Phase 1 Once the rubble layer had been removed, traces of two main walls appeared at the eastern and western ends of the trench (Fig. B). These walls (W13 and W22) were faced with roughly carved blocks and had a mortared rubble core. Both walls shared the same characteristics as the walls belonging to Structure 2 uncovered in Trench XC, and, as excavation proceeded, it became clear that they represented the continuation of walls W98/03 and W98/51.⁴⁴ Although they do not survive to any great height, they provide a good indication of the plan of the building. Structure 2 is now revealed to have been a rectangular building, aligned northwest to southeast and having originally four entrances—three on the north-eastern and one on the northwestern side. In addition to the buttresses found at the corners of the northwest end wall (W98/14) of Structure 2 in Trench XC, the excavations in Trench XD provided evidence for further buttresses built

into the inner faces of W13 and W22. Although the exact nature of the upper stories and the roof of the building cannot be determined, the rectangular plan and the thickness of the walls suggest that Structure 2 had a substantial masonry superstructure, which probably included a second floor and/or vaulted ceilings. In the area between W05, W13, W19, and W22, a paved floor of large stone slabs survives *in situ* (Context 21; Fig. 15). This may be the Phase 1 floor of Structure 2, but in the area to the north-east of W05 later alterations to the building had apparently destroyed almost all of the rest of this paved floor, and only in the northern corner of the trench were traces of a similar stone floor found (Context 30; Fig. 16). Because of the reuse of the building it is impossible to give a precise date for the construction of Structure 2, but it is now clear that it existed before the Enclosure's circuit wall was built. At least one of the principal walls (W13) of Structure 2 runs underneath the new defensive wall (W03; Fig. 17), which here rises to accommodate the surviving masonry.

Phase 2 The first alteration to Structure 2 that can now be detected occurred when a well-built cross wall (W19) was constructed within Structure 2. In construction technique it closely resembles the building's Phase 1 walls, but it is not bonded into the inner faces of W13 and W22. A conduit, 0.26 m wide, pierces W19 roughly at its central point. The surfaces of W19 and W22 were plastered over with a thick layer of hydraulic mortar; this also extends onto the floor, forming a continuous curved surface between wall and floor (Fig. 17). Other traces of this mortar survive not only as fill between the stone floor slabs and on the conduit in W19 but also on the surfaces of W13 and W22 to the north of W05, indicating that the cistern or basin was originally much larger. So it would seem that much of the area within Structure 2 (as exposed in Trench XD) was at one time used for storing water. If this is so, then the openings in W13 must also have been blocked up during Phase 2, although tangible evidence for this is lacking.⁴⁵ The water apparently flowed into the cistern (or large basin) through the conduit from

⁴³ T1519, gray-veined marble, broken on all sides, L. (as extant) 0.32 m.

⁴⁴ Locals reported that these walls had survived above ground within living memory but had been plundered for stone, leaving only the lower section of the walls that was already buried. This may explain why all the walls survive to this day at roughly the same height.

⁴⁵ The outer face of W14 (see Fig. 17) comprises loose rubble masonry and quantities of broken tile. However, the large blocks visible at the base of the inner face of the same wall resemble the composition of W19 of Phase 2 (see Fig. 15).

the area that is now buried beneath the circuit wall, confirmed by the fact that the stone paving slopes down away from W19 in a northwesterly direction. There is, however, no evidence of how the water drained or was extracted from the cistern.

Phase 3 At some point the stone paving was replaced with a compacted earth floor (Context 25; Fig. 16), laid above a layer containing brick fragments and broken terra-cotta storage jars (Context 27). This floor can be associated with the construction of a second cross-wall (W05), roughly aligned but not exactly parallel to W19. These alterations effectively put an end to the use of Structure 2 for water-storage purposes and also made the narrow corridorlike area between W19 and W05 into a dead space. It was probably at this stage that the conduit running through W19 was blocked up and the surviving blocking (W14) in W13 was constructed (Fig. 17). The appearance and composition of W05 and W14 are very similar, strengthening the view that they are contemporary. It may be postulated that this major change to Structure 2 was connected with the construction of the Enclosure wall (W03). It is unclear whether more of W13 had to be deliberately demolished in order to make room for the circuit wall, but the continued use of parts of Structure 2 after the construction of W03 implies that some of its walls must have survived to a much greater height. In general, however, it would seem that the site was not systematically leveled in order to prepare the ground when the Enclosure wall was constructed. In all probability an open area or passageway was created between the new southeastern wall (W05) of Structure 2 and the inner face of W03, and it may be that this was covered with a tile floor, traces of which survive on the upper surface of W19.⁴⁶

The floor (Context 25; Fig. 16) inside Structure 2 is remarkably uniform, but in two areas traces of rectangular mortar-lined trays were found sunk into its surface (Context 27). Their function remains uncertain. The multiple sur-

face layers of this packed earth floor indicate that the area was in use for some time and required frequent resurfacing. A stone block laid flat beside W22 at the northwestern end of the trench also suggests that access may have been provided by stairs and implies that the area now served as a basement storeroom.

Phase 4 The latest phase of occupation continued to make use of the existing walls in Structure 2. Traces of this phase appeared immediately below the layers of rubble fallen from the circuit wall and consisted principally of rubble walls (W16) made up of small stone blocks and earth mortar that divided the area within Structure 2 into six small, irregular compartments (Fig. 16). The rooms contained numerous fragments of storage jars and large *pithoi*; one setting bed for a *pithos* was also found still *in situ* at the northwestern end of the trench. This evidence strongly suggests that Structure 2 was now used as a depot for dry goods. Between the rubble walls (W16), a second well-defined earth floor surface (Context 20) was found.

An indication of the date for Phase 4 was provided by the discovery of two copper alloy coins, both identified as folles of Emperor Nikephoros II Phokas (963–969). One (SF4024; Fig. 12) came from an earth layer (Context 17) above the floor associated with the rubble walls (W16), while the other (SF4026) was found on the surface of the floor itself (Context 20). So it would seem that the floor was laid before the third quarter of the tenth century and, if the construction of the Phase 3 cross-wall (W05) and floor (Context 25) is correctly associated with the restructuring of Structure 2 as a result of the building of the Enclosure's circuit wall, then it may tentatively be suggested that the major redevelopment of this central part of the site should be placed considerably earlier than ca. 970.

The Channel or Drain

One of the most intriguing discoveries in 2000 was a channel, flanked to either side by six massive stone slabs (Context 32), that runs parallel to the northeastern side wall (W13) of Structure 2 (Figs. 18, 19). This area was excavated in order to link the new trench (XD) with the trench (XB) excavated in 1996. The chan-

⁴⁶ A small patch of tiled floor was found at the base of the Enclosure wall in Trench XB in 1996, overlying one of the stone troughs; *DOP* 52 (1998): 328, fig. B. It may also be noted that the narrow area between the circuit wall (W03) and W19 had a fill below the level of the tiled floor containing mud-brick. Other concentrations of mud-brick had been found in Trench XB.

nel or drain was, apparently, once covered over with wooden planks, the unburned remains of which (Context 37) were discovered collapsed within the channel. The wooden planks clearly rested on the stone slabs to either side, for the inner edge of each slab had been carefully cut back to provide a lip on which the planks could rest. Moreover, traces of wood were detected on the surface of these cuttings. The channel may have been longer originally, but a *spolia* block resembling a piece of an architrave had been placed across its southeastern end. Most of this block remains buried below the Enclosure's circuit wall (W03; Fig. 18).⁴⁷ The channel was also blocked off at the other end with a rubble wall (W33) that runs across from W13 of Structure 2 (Fig. 19), and certainly no trace of its continuation was detected in Trench XC in 1998. The interior of the channel was not fully excavated before the end of the season, and the wood remains were left *in situ* for further work and analysis in 2001.⁴⁸ A thin layer of ash (Context 34) was recognized immediately above the channel in the area between the large slabs, while the fill inside the channel also contained a considerable amount of burned material (Contexts 37 and 39), suggesting that the channel's use may have come to a sudden, violent end. Similar discrete areas of ash and carbon were also excavated in the gap between the channel and the outer face of W13 of Structure 2. The only coin (SF4027; see above, p. 288, n. 37) found in association with the channel was lodged in a crack between the broken-off corner and the rest of the slab at the northwestern end of the channel. That this coin belongs to the reign of Emperor Theophilus may be of special significance, but further excavation of the interior of the channel is required before any firm connection can be made between the channel's apparent destruction and the sack of Amorium in 838.

⁴⁷ While this block provided some support to the circuit wall above, it should be noted that, whereas elsewhere the foundations of W03 are built immediately over earlier features (such as the stone trough in Trench XB and W13 of Structure 2 in Trench XD), here there is a layer of earth mixed with broken brick and tile between the level of the channel and the lowest foundation course of the Enclosure wall.

⁴⁸ These features were not left exposed over the winter of 2000/1 but were covered with geotextile and a temporary backfill of crushed pumice.

CONCLUSION

It is now evident that Structure 2 is much larger than was envisaged when it was first partially uncovered in 1998. The excavations in Trench XD have also made it clear that there were as many as four main phases of occupation within the building. The last phase involved the construction of flimsy partition walls and the division of the interior of part of Structure 2 into a number of small compartments, which match some of the latest features excavated in 1998 in Trench XC. The recognition of the two earth floors in Trench XD has also helped to clarify the situation within the part of Structure 2 that had been excavated in 1998 where it had proved difficult to find any trace of a floor surface.⁴⁹ They show a uniformity of occupation inside Structure 2 extending from W05 up to the end wall (W98/14) of the building. So it would seem that the blocking of the doorway in W98/03 took place at the same time that the earlier floor (Context 25) was laid. It can also be associated with the other blocking walls (W14) uncovered in Trench XD, which it matches closely in construction and materials.

The discovery of the channel or drain to the northeast of Structure 2 throws new light on the troughs that were uncovered in 1996 and 1998, since it is obvious from their orientation and stratigraphy that these features belong together. What relationship these features had with Phase 2 of Structure 2 remains unclear, but it is certain that they all predate the construction of the Enclosure's circuit wall, and it may be that they all served a common purpose, forming part of a larger complex. The interpretation of these findings is still in the preliminary stages, but it may be suggested tentatively that this complex could have served as a Byzantine dye works, tannery, or fullers' installation.

The sequence of buildings and occupation layers within the Enclosure is now much clearer than it was in 1998, when it was suggested that Structure 2 might be contemporary with the construction of the Enclosure's circuit or defensive wall. This year's work in the area designated as Trench XD has proved conclusively that Structure 2 predates the Enclosure wall. The excavations have also shown that Structure

⁴⁹ Cf. *DOP* 55 (2001): 385 and 399, fig. J.

2 was not a simple square tower, but a much larger rectangular building that extends further to the southwest. Since it was argued in 1998 that Structure 2 belonged to Stratum IV, we can now identify three major building phases within the area of Trenches XC and XD. The earliest saw the construction of Structure 1 (in Stratum VII), to which Structure 2 was later added, while in the third phase came the addition of the Enclosure's circuit wall. The alignment of the northeast wall (W13) of Structure 2 with the channel or drain and the row of troughs in Trench XB implies that these features were all laid out as part of the same plan and even formed part of the same complex. Their construction may not necessarily have been contemporaneous, but the fact that the Enclosure's circuit wall was built immediately on top of them suggests that they all fell out of use at the same time. There is no evidence to suggest that either Structure 2 or the troughs had been abandoned and covered with a significant layer of deposit before the circuit wall was built.

Further work is now required in the area outside the Enclosure to see if more of Structure 2 exists there in the same way that part of a trough appeared in Trench XA outside the circuit wall in 1996.⁵⁰ It is, therefore, planned to extend Trench XA to the southwest during the 2001 field season. Another objective in the coming year is to excavate more of Structure 1 by enlarging Trench XC in a northwesterly direction. In this way it is hoped to clarify the na-

ture and function of the buildings that stood in this central area of the site before the construction of the Enclosure.⁵¹ It would also seem likely that they could provide the best opportunity for investigating occupational levels belonging to the Byzantine Dark Ages.

It remains uncertain what function the Enclosure itself served and to what uses the buildings within it were put after its construction, although it is clear that these changed dramatically when the Enclosure wall was superimposed on part of Structure 2. It seems increasingly more certain that the Enclosure with its massive circuit wall was laid out during middle Byzantine times, that is, after the siege and sack of Amorium in 838. The defensive appearance of the circuit wall is all the more striking now that a greater length of its inner face has been exposed, reaffirming the view that its construction was probably an imperial or state initiative. The creation of the Enclosure may thus be associated with the renewed importance of Amorium as a military post on one of the principal highways across Anatolia. Despite the lack of literary references, Amorium may have served a strategic purpose as a staging-post, muster-point or winter headquarters for the large-scale Byzantine raids into Cilicia during the reign of Basil I.⁵²

⁵¹ For a brief outline of the findings in 2001, see Lightfoot, "Amorium 2001," 9.

⁵² See M. Whittow, *The Making of Byzantium, 600–1025* (Berkeley, 1996), 314.

⁵⁰ *DOP* 52 (1998): 328, and figs. C and 14.